# LONDON-WEST MIDLANDS ENVIRONMENTAL STATEMENT

## Volume 5 | Technical Appendices

CFA6 | South Ruislip to Ickenham

**Operational assessment (SV-004-006)**

Sound, noise and vibration

November 2013

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**Operational assessment (SV-004-006)**

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Department for Transport

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# Appendix SV-004-006

| | | |
|---|---|---|
| Environmental topic: | Sound, noise and vibration | SV |
| Appendix name: | Operation assessment | 004 |
| Community forum area: | South Ruislip to Ickenham | 006 |

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# 1 Introduction

## 1.1 Structure of the sound, noise and vibration appendices

1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these details the methodology used (Appendix SV-001-000) and relates to the sound, noise and vibration assessment for all community forum areas (CFA).

1.1.2 For the South Ruislip to Ickenham community forum area (CFA06), the other three sections are as follows:

- baseline sound, noise and vibration (Appendix SV-002-006);
- construction sound, noise and vibration (Appendix SV-003-006); and
- operational sound, noise and vibration (Appendix SV-004-006) (this appendix).

1.1.3 The outcomes of this assessment are summarised in Volume 2: CFA06 Report, Chapter 11 Sound, Noise and Vibration.

1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 sound, noise and vibration map book.

1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the operation of the Proposed Scheme for the South Ruislip to Ickenham area on:

- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community spaces; and
- community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.

1.1.6 The assessment of likely impacts, effects and significant effects from operational noise and vibration on agricultural, community, ecological or heritage receptors and the assessment of tranquillity are presented in the following documents within Volume 5:

- Agriculture, forestry and soils — Appendix AG-001-006
- Community — Appendix CM-001-006
- Ecology — Appendix EC-005-001
- Heritage — Appendix CH-003-006
- Landscape and Visual — Appendix LV-001-006

## 1.2 Evaluation of impacts and effects

1.2.1 This appendix provides a quantitative assessment of operational noise and vibration impacts and effects and a qualitative assessment of likely significant effects, based on the impacts and effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.

1.2.2 Indirect effects arising from permanent changes in traffic patterns on the existing road and rail networks as a consequence of the Proposed Scheme are also reported in this appendix, where they would occur within the study area as defined in Volume 5: Appendix SV-001-000.

1.2.3 Route-wide impacts, effects and significant effects associated with noise or vibration from the operation of the Proposed Scheme are reported in Volume 3.

1.2.4 Off-route effects of noise or vibration arising from the operation of the Proposed Scheme, including those likely to arise from permanent changes in traffic patterns on roads or railways outside of the study area for direct effects are reported in Volume 4.

1.2.5 In undertaking the assessment of sound, noise and vibration, consistent with EIA Regulations and emerging National Planning Practice Guidance[1] a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV001-000.

1.2.6 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The Assessment Locations employed in this assessment are presented on map series Sv-02 in the CFA06 Volume 5 sound, noise and vibration map book.

[1] National Planning Practice Guidance – Noise http://planningguidance.planningportal.gov.uk ; refer to the table summarising noise exposure hierarchy

# 2 Scope, assumptions and limitations

## 2.1 Regional and local policy guidance

2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group (Acoustics), information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the following local policy guidance on noise and vibration has been identified:

- The Hillingdon Unitary Development Plan - Sept 1998; and
- Hillingdon Local Plan: Part 1 Strategic Policies - Nov 2012.

2.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5: Appendix SV-001-000.

## 2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group (Acoustics), is set out in Volume 1, Section 8.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration
- September / October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November / December 2012; specific request for the Community Forum to propose baseline sound monitoring locations;
- January / February 2013; feedback to the Community Forum on any proposed baseline monitoring locations; and
- verbal / written response to questions on sound, noise and vibration.

## 2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), is clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

## 2.4 Assumptions

2.4.1 Route-wide assumptions are outlined in Volume 1, Section 8, and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of operational sound noise and vibration within this CFA are set out in Volume 2: Report 06.

## 2.5 Local limitations

2.5.1 In this area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to undertake the assessment. Further information is provided in Volume 5: Appendix SV-002-006.

# 3 Environmental baseline

## 3.1 Existing baseline

3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are included within Table 3. Details of the baseline data collection and the methodology are given in Volume 5: Appendix SV-001-000 and specifically for this study area in Volume 5: Appendix SV-002-006.

3.1.2 The majority of receptors adjacent to the line of the route are not currently subject to appreciable vibration and therefore vibration at all receptors has been assessed using the absolute vibration criteria as described in Volume 5: Appendix SV-001-000.

## 3.2 Future baseline

3.2.1 The assessment is based upon the predicted change in sound levels that result from the Proposed Scheme. The assessment initially considered a reasonable worst case (that would overestimate the change in levels) by assuming that sound levels would not change from the existing baseline year of 2012/2013. Where significant effects were identified on this basis, the effects have been assessed using the baseline year of 2026 to coincide with the proposed start of passenger services. The future baseline is for the sound environment that would exist in 2026 without the Proposed Scheme.

# 4 Effects arising during operation

## 4.1 Introduction

## 4.2 Introduction

4.2.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.2.2 The structure of this assessment report is:

- Avoidance and mitigation measures
- Quantitative identification of impact and effects
  - Ground-borne sound and vibration
    - Residential
    - Non-residential
  - Airborne sound
    - Residential
    - Non-residential
- Assessment of impacts and effects
  - Residential receptors: direct effects – dwellings
  - Residential receptors: direct effects – communities
  - Residential receptors: indirect effects
  - Non-residential receptors: direct effects
  - Non-residential receptors: indirect effects
  - Cumulative effects from the proposed scheme and other committed development.

## 4.3 Avoidance and mitigation measures

4.3.1 These are set out in Volume 2: Report 06.

4.3.2 Additionally, within this area the Vibration Additional Mitigation Case track has been assumed in the tunnels between the West Ruislip portal and approximately where the Proposed Scheme passes the LU Metropolitan/Piccadilly Lines. Further information is presented in Volume 5: Appendix SV-001-000.

## 4.4 Quantitative identification of impacts and effects

### Ground-borne sound and vibration

4.4.2 Assessment locations defined for the quantitative assessment of impacts are shown on map series SV-02 in the CFA06 Volume 5 sound, noise and vibration map book.

4.4.3 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in Table 1 is provided in Appendix SV-001-000, with the following additional notes.

| | |
|---|---|
| B | For non-residential receptors further detail about the type of effect is set out in the text of Volume 5: Appendix SV-001-000. |
| NA | Type of effect - Generally no adverse effect |
| A | Type of effect - Adverse effect |
| S | Type of effect - Significant adverse effect |
| VDV | Vibration Dose Value |
| ~ | The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000). |
| ^ | The impact methodology has identified a potential significant effect at this receptor which based upon further qualitative information is not considered to be a likely significant effect. Please refer the end of this Appendix for further information. |
| | Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area, or individual receptor. |
| | Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact |
| | Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact |
| | Red denotes a high ground-borne noise impact or a major ground-borne vibration impact |
| | Dark red denotes a very high ground-borne noise impact |

Table 1: Ground-borne sound and vibration levels, noise and vibration impacts and effects

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 410569 | The Greenway, Ickenham | 24 | 0.15 | 0.07 | - | 15 | NA | R | T | - | - | - | - | |
| 422998 | The Greenway, Ickenham | 22 | 0.13 | 0.06 | - | 1 | NA | R | T | - | - | - | - | |
| 423037 | The Greenway, Ickenham | 24 | 0.15 | 0.08 | - | 10 | NA | R | T | - | - | - | - | |
| 620918 | Great Central Avenue, Ruislip | 21 | 0.08 | 0.04 | - | 6 | NA | R | T | - | - | - | - | |
| 620925 | Great Central Avenue, Ruislip | 23 | 0.09 | 0.05 | - | 17 | NA | R | T | - | - | - | - | |
| 620935 | Great Central Avenue, Ruislip | 23 | 0.10 | 0.05 | - | 14 | NA | R | T | - | - | - | - | |
| 620936 | Great Central Avenue, Ruislip | 24 | 0.11 | 0.05 | - | 12 | NA | R | T | - | - | - | - | |
| 620937 | Great Central Avenue, Ruislip | 21 | 0.08 | 0.04 | - | 10 | NA | R | T | - | - | - | - | |
| 620943 | Great Central Avenue, Ruislip (also committed development ref CFA6/3) | 25 | 0.11 | 0.06 | - | 1(2) | NA | R(CD) | T | - | - | - | - | |
| 620945 | Primrose Gardens, Ruislip | 21 | 0.09 | 0.04 | - | 8 | NA | R | T | - | - | - | - | |
| 620946 | Station Approach, South Ruislip | 22 | 0.09 | 0.04 | - | 6 | NA | R | T | - | - | - | - | |
| 620955 | Station Approach, South Ruislip | 25 | 0.11 | 0.05 | - | 4 | NA | R | T | - | - | - | - | |
| 620957 | Station Approach, South Ruislip | 23 | 0.09 | 0.04 | - | 8 | NA | R | T | - | - | - | - | |
| 620969 | Long Drive, South Ruislip | 28 | 0.13 | 0.07 | - | 1 | NA | R | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip | 24 | 0.10 | 0.05 | - | 13 | NA | R | T | - | - | - | - | |
| 620992 | Trenchard Avenue, Ruislip | 15 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 620993 | Trenchard Avenue, Ruislip | 12 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 620994 | Trenchard Avenue, Ruislip | 12 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 620999 | Trenchard Avenue, Ruislip | 10 | 0.03 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 621002 | Trenchard Avenue, Ruislip | 10 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621004 | Portal Close, Ruislip | 14 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621005 | Portal Close, Ruislip | 14 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621006 | Portal Close, Ruislip | 14 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621007 | Portal Close, Ruislip | 11 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621008 | Portal Close, Ruislip | 11 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621009 | Portal Close, Ruislip | 12 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 621010 | Portal Close, Ruislip | 12 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 621011 | Portal Close, Ruislip | 11 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 621012 | Portal Close, Ruislip | 10 | 0.03 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 621029 | Carmichael Close, Ruislip | 11 | 0.03 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621030 | Bridgewater Road, Ruislip | 15 | 0.04 | 0.02 | - | 13 | NA | R | T | - | - | - | - | |
| 621031 | Carmichael Close, Ruislip | 15 | 0.04 | 0.02 | - | 19 | NA | R | T | - | - | - | - | |
| 621032 | Carmichael Close, Ruislip | 11 | 0.03 | 0.02 | - | 12 | NA | R | T | - | - | - | - | |
| 621033 | Carmichael Close, Ruislip | 11 | 0.03 | 0.02 | - | 16 | NA | R | T | - | - | - | - | |
| 621035 | Carmichael Close, Ruislip | 11 | 0.03 | 0.02 | - | 12 | NA | R | T | - | - | - | - | |
| 621036 | Carmichael Close, Ruislip | 14 | 0.04 | 0.02 | - | 19 | NA | R | T | - | - | - | - | |
| 621037 | Carmichael Close, Ruislip | 10 | 0.03 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621038 | Carmichael Close, Ruislip | 14 | 0.04 | 0.02 | - | 13 | NA | R | T | - | - | - | - | |
| 621039 | Carmichael Close, Ruislip | 13 | 0.04 | 0.02 | - | 16 | NA | R | T | - | - | - | - | |
| 621041 | Bridgwater Road, Ruislip | 24 | 0.07 | 0.03 | - | 6 | NA | R | T | - | - | - | - | |
| 621042 | Bridgwater Road, Ruislip | 16 | 0.04 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 621043 | Bridgwater Road, Ruislip | 12 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621059 | The Point, Ruislip | 15 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621060 | Bedford Road, Ruislip | 13 | 0.03 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621061 | Clyfford Road, Ruislip | 11 | 0.03 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621071 | Trevor Crescent, Ruislip | 10 | 0.03 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621073 | Trevor Crescent, Ruislip | 10 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621074 | Trevor Crescent, Ruislip | 13 | 0.04 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621080 | Stafford Road, Ruislip | 11 | 0.03 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621081 | Trevor Crescent, Ruislip | 12 | 0.03 | 0.02 | - | 9 | NA | R | T | - | - | - | - | |
| 621085 | Stafford Road, Ruislip | 11 | 0.03 | 0.02 | - | 14 | NA | R | T | - | - | - | - | |
| 621098 | West End Road, Ruislip | 19 | 0.05 | 0.02 | - | 1 | NA | R | T | - | - | - | - | |
| 621099 | West End Road, Ruislip | 18 | 0.05 | 0.02 | - | 11 | NA | R | T | - | - | - | - | |
| 621100 | West End Road, Ruislip | 16 | 0.04 | 0.02 | - | 22 | NA | R | T | - | - | - | - | |
| 621101 | West End Road, Ruislip | 12 | 0.03 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621102 | West End Road, Ruislip | 13 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621103 | West End Road, Ruislip | 12 | 0.03 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621106 | Roundways, Ruislip | 16 | 0.04 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621107 | Roundways, Ruislip | 17 | 0.04 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621108 | Roundways, Ruislip | 15 | 0.04 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621109 | Almond Close, Ruislip | 18 | 0.05 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621110 | Almond Close, Ruislip | 16 | 0.04 | 0.02 | - | 2 | NA | R | T | - | - | - | - | |
| 621111 | Roundways, Ruislip | 13 | 0.03 | 0.02 | - | 14 | NA | R | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV $m/s^{1.75}$ Daytime (07:00 - 23:00) | VDV $m/s^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 621112 | Roundways, Ruislip | 12 | 0.03 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621122 | Lawn Close, Ruislip | 19 | 0.05 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621123 | Lawn Close, Ruislip | 16 | 0.04 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621124 | Lawn Close, Ruislip | 13 | 0.03 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621125 | Lawn Close, Ruislip | 16 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621126 | Lawn Close, Ruislip | 13 | 0.03 | 0.02 | - | 12 | NA | R | T | - | - | - | - | |
| 621132 | Herlwyn Avenue, Ruislip | 15 | 0.04 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621133 | Herlwyn Avenue, Ruislip | 12 | 0.03 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621134 | Herlwyn Avenue, Ruislip | 12 | 0.03 | 0.02 | - | 5 | NA | R | T | - | - | - | - | |
| 621136 | Herlwyn Avenue, Ruislip | 13 | 0.03 | 0.02 | - | 11 | NA | R | T | - | - | - | - | |
| 621137 | Herlwyn Avenue, Ruislip | 13 | 0.03 | 0.02 | - | 10 | NA | R | T | - | - | - | - | |
| 621138 | Herlwyn Avenue, Ruislip | 14 | 0.04 | 0.02 | - | 7 | NA | R | T | - | - | - | - | |
| 621139 | Herlwyn Avenue, Ruislip | 14 | 0.04 | 0.02 | - | 4 | NA | R | T | - | - | - | - | |
| 621140 | Herlwyn Avenue, Ruislip | 19 | 0.05 | 0.02 | - | 26 | NA | R | T | - | - | - | - | |
| 621141 | Herlwyn Avenue, Ruislip | 17 | 0.04 | 0.02 | - | 18 | NA | R | T | - | - | - | - | |
| 621394 | Roxburn Way, Ruislip | 11 | 0.03 | 0.02 | - | 6 | NA | R | T | - | - | - | - | |
| 621399 | Westfield Way, Ruislip | 12 | 0.03 | 0.02 | - | 8 | NA | R | T | - | - | - | - | |
| 621400 | Westfield Way, Ruislip | 11 | 0.03 | 0.02 | - | 14 | NA | R | T | - | - | - | - | |
| 621401 | Crosier Way, Ruislip | 11 | 0.03 | 0.02 | - | 19 | NA | R | T | - | - | - | - | |
| 621670 | Blenheim Crescent, Ruislip | 19 | 0.07 | 0.03 | - | 3 | NA | R | T | - | - | - | - | |
| 621671 | Blenheim Crescent, Ruislip | 33 | 0.20 | 0.10 | - | 4 | A | R | T | - | - | - | - | ~ |
| 621672 | Blenheim Crescent, Ruislip | 28 | 0.13 | 0.07 | - | 2 | NA | R | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | Significant effect |
| 621673 | Blenheim Crescent, Ruislip | 32 | 0.19 | 0.10 | - | 3 | A | R | T | - | - | - | - | ~ |
| 621675 | Blenheim Crescent, Ruislip | 25 | 0.11 | 0.05 | - | 2 | NA | R | T | - | - | - | - | |
| 621676 | Blenheim Crescent, Ruislip | 21 | 0.08 | 0.04 | - | 6 | NA | R | T | - | - | - | - | |
| 621677 | Blenheim Crescent, Ruislip | 23 | 0.09 | 0.05 | - | 3 | NA | R | T | - | - | - | - | |
| 621678 | Blenheim Crescent, Ruislip | 21 | 0.07 | 0.04 | - | 3 | NA | R | T | - | - | - | - | |
| 621679 | Blenheim Crescent, Ruislip | 19 | 0.07 | 0.03 | - | 2 | NA | R | T | - | - | - | - | |
| 621680 | Blenheim Crescent, Ruislip | 18 | 0.06 | 0.03 | - | 14 | NA | R | T | - | - | - | - | |
| 621681 | Blenheim Crescent, Ruislip | 19 | 0.07 | 0.03 | - | 3 | NA | R | T | - | - | - | - | |
| 621682 | Blenheim Crescent, Ruislip | 20 | 0.07 | 0.03 | - | 10 | NA | R | T | - | - | - | - | |
| 621942 | Rabournmead Drive, Northolt | 27 | 0.12 | 0.06 | - | 8 | NA | R | T | - | - | - | - | |
| 621943 | Rabournmead Drive, Northolt | 27 | 0.12 | 0.06 | - | 14 | NA | R | T | - | - | - | - | |
| 621944 | Rabournmead Drive, Northolt | 24 | 0.10 | 0.05 | - | 6 | NA | R | T | - | - | - | - | |
| 621953 | Rabournmead Drive, Northolt | 23 | 0.09 | 0.04 | - | 8 | NA | R | T | - | - | - | - | |
| 621954 | Rabournmead Drive, Northolt | 24 | 0.10 | 0.05 | - | 10 | NA | R | T | - | - | - | - | |
| 621955 | Rabournmead Drive, Northolt | 24 | 0.09 | 0.05 | - | 14 | NA | R | T | - | - | - | - | |
| 621984 | Ickenham Close, Ruislip | 22 | 0.08 | 0.04 | - | 8 | NA | R | T | - | - | - | - | |
| 621990 | Ickenham Close, Ruislip | 22 | 0.08 | 0.04 | - | 4 | NA | R | T | - | - | - | - | |
| 621994 | Ickenham Close, Ruislip | 19 | 0.07 | 0.03 | - | 5 | NA | R | T | - | - | - | - | |
| 621995 | Ickenham Close, Ruislip | 26 | 0.11 | 0.06 | - | 10 | NA | R | T | - | - | - | - | |
| 621996 | Ickenham Close, Ruislip | 23 | 0.09 | 0.04 | - | 3 | NA | R | T | - | - | - | - | |
| 621997 | Ickenham Close, Ruislip | 20 | 0.07 | 0.04 | - | 4 | NA | R | T | - | - | - | - | |
| 622004 | Ickenham Road, Ruislip | 20 | 0.07 | 0.04 | - | 2 | NA | R | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 622014 | The Greenway, Ickenham | 19 | 0.09 | 0.05 | - | 6 | NA | R | T | - | - | - | - | |
| 622016 | The Greenway, Ickenham | 29 | 0.06 | 0.03 | - | 9 | NA | R | T | - | - | - | - | |
| 622020 | Ickenham Road, Ruislip | 26 | 0.12 | 0.06 | - | 3 | NA | R | T | - | - | - | - | |
| 622026 | Cranston Close, Ickenham | 19 | 0.07 | 0.03 | - | 5 | NA | R | T | - | - | - | - | |
| 622041 | Aylsham Drive, Ickenham | 33 | 0.09 | 0.05 | - | 7 | NA | R | T | - | - | - | - | |
| 620909 | Victoria Way, Ruislip, (Office) | 27 | 0.12 | 0.06 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620943 | Holly Court, Great Central Avenue, Ruislip, (General Commercial) | 25 | 0.11 | 0.06 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620944 | Great Central House, Great Central Avenue, Ruislip, (General Commercial) | 26 | 0.12 | 0.06 | - | 3 | B | G4/V3 | T | - | - | - | - | |
| 620955 | Ruislip Inn, Station Approach, South Ruislip, (Inn) | 25 | 0.11 | 0.05 | - | 1 | B | G4/V2 | T | - | - | - | - | |
| 620955 | Station Approach, South Ruislip, (General Commercial) | 25 | 0.11 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620955 | Station Approach, South Ruislip, (General Commercial) | 25 | 0.11 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620955 | Station Approach, South Ruislip, (Shopping) | 25 | 0.11 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620956 | South Ruislip Station, Station Approach, South Ruislip, (General Commercial) | 28 | 0.15 | 0.08 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620957 | Station Approach, South Ruislip, (General Commercial) | 23 | 0.09 | 0.04 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620963 | Charlwood House, The Runway, | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV $m/s^{1.75}$ Daytime (07:00 - 23:00) | VDV $m/s^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| | Ruislip, (General Commercial) | | | | | | | | | | | | | |
| 620963 | Runway House, The Runway, Ruislip, (Police Services) | 24 | 0.10 | 0.05 | - | 3 | B | G4/V3 | T | - | - | - | - | |
| 620966 | Long Drive, Ruislip, (General Commercial) | 32 | 0.20 | 0.10 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620967 | Long Drive, Ruislip, (General Commercial) | 27 | 0.13 | 0.06 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620968 | Days Inn Hotel, Long Drive, Ruislip, (Hotel) | 32 | 0.20 | 0.10 | - | 1 | A | G4/V2 | T | - | - | - | - | ^ |
| 620969 | Long Drive, Ruislip, (Car Dealer) | 28 | 0.13 | 0.07 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (Shopping) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (General Commercial) | 24 | 0.10 | 0.05 | - | 2 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (General Commercial) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (Office) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (General Commercial) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (Car Dealer) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (Shopping) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620970 | Long Drive, Ruislip, (Restaurant) | 24 | 0.10 | 0.05 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620978 | The British Polio Fellowship, The Runway, Ruislip, (Church) | 26 | 0.12 | 0.06 | - | 3 | B | G3/V3 | T | - | - | - | - | |
| 620979 | The Runway, Ruislip, (Office) | 23 | 0.09 | 0.05 | - | 2 | B | G4/V3 | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 620980 | Spendale House, The Runway, Ruislip, (General Commercial) | 25 | 0.11 | 0.06 | - | 3 | B | G4/V3 | T | - | - | - | - | |
| 620989 | Knights Court, Braintree Road, Ruislip, (General Commercial) | 17 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620990 | Braintree Industrial Estate, Braintree Road, Ruislip, (General Commercial) | 14 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 620991 | Braintree Industrial Estate, Braintree Road, Ruislip, (General Commercial) | 13 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621040 | Braintree Industrial Estate, Braintree Road, Ruislip, (General Commercial) | 12 | 0.03 | 0.02 | - | 2 | B | G4/V3 | T | - | - | - | - | |
| 621040 | Braintree Industrial Estate, Braintree Road, Ruislip, (Car Dealer) | 12 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621040 | Braintree Road, Ruislip, (General Commercial) | 12 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621040 | Braintree Industrial Estate, Braintree Road, Ruislip, (Office) | 12 | 0.03 | 0.02 | - | 5 | B | G4/V3 | T | - | - | - | - | |
| 621097 | Bell Close, Ruislip, (Office) | 20 | 0.05 | 0.02 | - | 2 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (General Commercial) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (General Commercial) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (General Commercial) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV $m/s^{1.75}$ Daytime (07:00 - 23:00) | VDV $m/s^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 621099 | West End Road, Ruislip, (General Commercial) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (Restaurant) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (Post Office) | 18 | 0.05 | 0.02 | - | 2 | B | G4/V3 | T | - | - | - | - | |
| 621099 | West End Road, Ruislip, (Café) | 18 | 0.05 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (Shopping) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (Shopping) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (General Commercial) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (General Commercial) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (Undertakers) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621100 | New Pond Parade, West End Road, Ruislip, (Café) | 16 | 0.04 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621101 | New Pond Parade, West End Road, Ruislip, (General Commercial) | 12 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621101 | New Pond Parade, West End Road, Ruislip, (Shopping) | 12 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |

| Assessment location | | Impact criteria | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Ground-borne sound level dB $L_{pASmax}$ | VDV m/s$^{1.75}$ Daytime (07:00 - 23:00) | VDV m/s$^{1.75}$ Night time (23:00 – 07:00) | % increase or decrease in VDV | Number of impacts represented | Type of effect | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation effect | |
| 621101 | New Pond Parade, West End Road, Ruislip, (General Commercial) | 12 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621335 | | 11 | 0.03 | 0.02 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 621336 | | 13 | 0.03 | 0.02 | - | 1 | B | G3/V3 | T | - | - | - | - | |
| 621685 | Station Yard, Ickenham Road, Ruislip, (General Commercial) | 30 | 0.19 | 0.09 | - | 3 | B | G4/V3 | T | - | - | - | - | |
| 622002 | Blenheim Care Centre, Ickenham Road, Ruislip, (Day Care) | 31 | 0.17 | 0.09 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 622004 | Knights Court, Ickenham Road, Ruislip, (Shopping) | 20 | 0.07 | 0.04 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 622004 | Station Parade, Ickenham Road, Ruislip, (Post Office) | 20 | 0.07 | 0.04 | - | 5 | B | G4/V3 | T | - | - | - | - | |
| 622009 | Ickenham Road, Ruislip, (Shopping) | 26 | 0.14 | 0.07 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 622020 | West Ruislip Station, Ickenham Road, Ruislip, (Shopping) | 26 | 0.12 | 0.06 | - | 1 | B | G4/V3 | T | - | - | - | - | |
| 709518 | Research Farm, Ickenham (Research facility) | - | 0.72 | 0.36 | - | 1 | B | G4/V1 | T | - | - | - | - | OSV06-N01 |
| 709519 | Research Farm, Ickenham (Research facility) | - | 0.16 | 0.08 | - | 1 | B | G4/V1 | T | - | - | - | - | OSV06-N01 |
| 709520 | Research Farm, Ickenham (Research facility) | - | 0.33 | 0.16 | - | 1 | B | G4/V1 | T | - | - | - | - | OSV06-N01 |

### *Direct impact - Summary*

4.4.4 The operational ground-borne noise and vibration impacts identified in Table 1 are summarised in Table 2.

Table 2: Summary of operational ground-borne noise and vibration impacts

| | Number of ground-borne sound impacts | | | |
|---|---|---|---|---|
| | Low | Medium | High | Very High |
| Residential properties | 7 | 0 | 0 | 0 |
| Non-residential properties | 0 | | | 0 |
| | Number of ground-borne vibration impacts | | | |
| | Minor | Moderate | Major | Risk of building damage |
| Residential properties | 7 | 0 | 0 | 0 |
| Non-residential properties | 4 | | | 0 |

## Airborne sound: direct impacts and effects

4.4.5 The direct effects from the operation of the Proposed Scheme as well as any new, amended or altered roads or railway lines, which are identified as part of the scheme, are presented in Table 3.

4.4.6 The assessment information, impact criteria and significance criteria for the assessment of the incorporated mitigation case at residential and non-residential receptors are presented in Table 3. The results should be considered in conjunction with the information contained in map series Sv-02 in the CFA6 Volume 5 sound, noise and vibration map book.

4.4.7 Explanation of the Table 3 information is provided in Volume 5: Appendix SV001-000, with the following additional notes.

| | |
|---|---|
| | Where the significant effect column is marked, then a significant effect is identified at the referenced group of dwellings, or individual residential or non-residential receptor. |
| | Yellow denotes a minor impact at a residential building – a change is of 3-5 dB |
| | Orange denotes a moderate impact at a residential building – a change is of 5-10 dB |
| | Red denotes a major impact at a residential building – a change is of >10 dB |
| * | Day - $L_{pAeq,07:00-23:00}$ |
| ** | Night - $L_{pAeq,23:00-07:00}$ |
| *** | Max - $L_{pAFmax}$ In the Proposed Scheme only column, two values are presented. The first is the value for the HS2 mitigated train and the second is the value for the TSI compliant train. For further information refer to Volume 5: Appendix SV-001-000. |
| **** | Where the Proposed Scheme modifies an existing source, i.e. road or railway realignments, the *Proposed Scheme only* level in the table includes the sound from the modified source. In this situation the *Do something (Opening year baseline + Year 15 traffic)* level has been corrected so as to not double count the sound associated with the road or railway on its new and existing alignment. |
| A | Adverse effect |
| B | For non-residential receptors further detail about the type of effect is set out in the text of Appendix SV-001-000. |
| CD | Committed Development. The value in brackets in the number of impacts represented column is |

the value with the committed development.

G (G1)Theatres, large auditoria and concert halls, (G2) Sound recording and broadcast studios, (G3) Places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) Schools, colleges, hospitals, hotels and libraries, and (G5) Offices and general commercial premises

H High existing ambient sound level. Defined as >65dB$L_{Aeq,\ day}$ and/or >55dB$L_{Aeq,\ night}$

L Low existing ambient sound level. Defined as <42dB$L_{Aeq,\ day}$ and/or <32dB$L_{Aeq,\ night}$

LD Landscape receptor

NA Generally no adverse effect

NI The receptor is predicted to qualify for mitigation, which shall be provided to the specification defined in the Noise Insulation (Railways and other Guided Rail Systems) Regulations 1996

R Residential

RM Residential mooring

S Significant adverse effect

U Unacceptable adverse effect

# A change of 3dB or greater has been identified however, the assessment methodology only defines an impact where the absolute sound level from the Proposed Scheme is greater or equal to 50 dB $L_{pAeq,\ 23:00-07:00}$ during the daytime or 40 dB $L_{pAeq,\ 07:00-23:00}$ at night. At the receptor denoted the absolute level condition is not met and therefore no impact is identified.

~ The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000).

$ A change of 3dB or greater has been identified however, the impact methodology for non-residential receptors includes a screening criteria for G3 building use of 50 dB $L_{pAeq,07:00-23:00,}$ for G4 building use 55 dB $L_{pAeq,07:00-23:00}$ and 45 dB $L_{pAeq,23:00-07:00}$ , for G5 building use 55 dB $L_{pAeq,07:00-23:00}$. At the receptor denoted the screening criteria is not met and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-000.

^ The impact methodology has either identified an impact at a receptor which based upon further qualitative information does not gives rise to a significant effect. Further information is provided at the end of this Appendix.

Table 3: Operational airborne sound level, noise impacts and effects

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| 405821 | St. Georges Drive, Ickenham | 42 | 33 | 53/56 | 46 | 41 | 49 | 47 | 42 | 1 | 1 | A | 53 | R | T | - | - | - | - | |
| 401424 | Harvil Road, Harefield | 58 | 49 | 70/73 | 55 | 50 | 58 | 58 | 52 | 4 | 2 | A | 1 | R | T | - | - | - | - | ~ |
| 402608 | Harvil Road, Harefield | 50 | 41 | 63/66 | 72 | 68 | 81 | 72 | 68 | 0 | 0 | A | 2 | R | T | H | - | - | - | |
| 405890 | Breakspear Road South, Ickenham | 43 | 34 | 54/58 | 58 | 50 | 62 | 58 | 50 | 0 | 0 | A | 31 | R | T | - | - | - | - | |
| 408586 | New Years Green Lane, Harefield | 46 | 37 | 56/59 | 50 | 45 | 49 | 51 | 45 | 1 | 0 | NA | 6 | R | T | - | - | - | - | |
| 408671 | New Years Green Lane, Harefield | 48 | 39 | 60/63 | 50 | 45 | 49 | 52 | 46 | 2 | 1 | NA | 1 | R | T | - | - | - | - | |
| 410569 | The Greenway, Ickenham | 55 | 46 | 67/70 | 59 | 53 | 57 | 60 | 54 | 2 | 1 | A | 11 | R | T | - | - | - | - | |
| 410650 | The Greenway, Ickenham | 53 | 44 | 66/69 | 48 | 45 | 53 | 54 | 47 | 6 | 2 | A | 16 | R | T | - | - | - | - | OSV06-C01 |
| 410706 | Oak Avenue, Ickenham | 48 | 39 | 63/66 | 60 | 55 | 60 | 60 | 55 | 0 | 0 | A | 24 | R | T | H | - | - | - | |
| 410739 | Oak Avenue, Ickenham | 45 | 36 | 60/63 | 60 | 55 | 60 | 60 | 55 | 0 | 0 | A | 20 | R | T | H | - | - | - | |
| 410896 | Parkfield Road, Ickenham | 44 | 35 | 59/62 | 60 | 55 | 60 | 60 | 55 | 0 | 0 | A | 27 | R | T | H | - | - | - | |
| 410980 | Parkfield Road, Ickenham | 48 | 39 | 65/68 | 60 | 55 | 60 | 60 | 55 | 0 | 0 | A | 35 | R | T | H | - | - | - | |
| 411779 | Rectory Way, Ickenham | 46 | 36 | 59/62 | 60 | 55 | 60 | 60 | 55 | 0 | 0 | A | 72 | R | T | H | - | - | - | |
| 411869 | Charlton Close, Ickenham | 43 | 34 | 56/59 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | A | 95 | R | T | - | - | - | - | |
| 412015 | Hoylake Crescent, Ickenham | 52 | 43 | 69/72 | 49 | 44 | 47 | 54 | 47 | 5 | 3 | A | 13 | R | T | - | - | - | - | OSV06-C01 |
| 412058 | Hoylake Crescent, Ickenham | 56 | 47 | 71/74 | 49 | 44 | 47 | 57 | 49 | 8 | 5 | A | 11 | R | T | - | - | - | - | OSV06-C01 |
| 412180 | Hoylake Crescent, Ickenham | 51 | 42 | 64/67 | 49 | 47 | 57 | 53 | 48 | 4 | 1 | A | 20 | R | T | - | - | - | - | OSV06-C01 |

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| 412363 | Bushey Road, Ickenham | 47 | 38 | 61/64 | 56 | 51 | 64 | 56 | 51 | 1 | 0 | A | 27 | R | T | - | - | - | - | |
| 412918 | Bushey Road, Ickenham | 48 | 39 | 61/64 | 56 | 51 | 64 | 56 | 51 | 1 | 0 | A | 44 | R | T | - | - | - | - | |
| 413031 | Hoylake Crescent, Ickenham | 51 | 42 | 66/69 | 49 | 47 | 44 | 53 | 44 | 3 | 3 | A | 11 | R | T | - | - | - | - | OSV06-C01 |
| 413114 | Pynchester Close, Ickenham | 53 | 43 | 66/69 | 47 | 39 | 44 | 54 | 45 | 7 | 6 | A | 15 | R | T | - | - | - | - | OSV06-C01 |
| 413146 | Bushey Road, Ickenham | 54 | 45 | 66/70 | 49 | 47 | 44 | 55 | 46 | 6 | -1 | A | 17 | R | T | - | - | - | - | OSV06-C01 |
| 413332 | Copthall Road East, Ickenham | 43 | 34 | 55/58 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | A | 99 | R | T | - | - | - | - | |
| 413480 | Hoylake Crescent, Ickenham | 47 | 38 | 61/64 | 52 | 45 | 52 | 53 | 46 | 1 | 1 | A | 23 | R | T | - | - | - | - | |
| 413536 | Hoylake Crescent, Ickenham | 52 | 42 | 66/69 | 52 | 45 | 52 | 55 | 47 | 3 | 2 | A | 12 | R | T | - | - | - | - | OSV06-C01 |
| 413556 | Copthall Road West, Ickenham | 52 | 43 | 64/68 | 58 | 50 | 62 | 59 | 51 | 1 | 1 | A | 8 | R | T | - | - | - | - | |
| 413594 | Copthall Road West, Ickenham | 50 | 41 | 63/67 | 46 | 41 | 49 | 51 | 44 | 5 | 3 | A | 6 | R | T | - | - | - | - | OSV06-C01 |
| 413856 | Elgar Close, Ickenham | 45 | 36 | 57/60 | 46 | 41 | 49 | 48 | 42 | 2 | 1 | A | 44 | R | T | - | - | - | - | |
| 414117 | St. Georges Drive, Ickenham | 47 | 38 | 59/62 | 46 | 41 | 49 | 49 | 43 | 4 | 1 | A | 46 | R | T | - | - | - | - | # |
| 414183 | Breakspear Road South, Ickenham | 50 | 41 | 62/65 | 58 | 50 | 62 | 58 | 51 | 1 | 0 | A | 37 | R | T | - | - | - | - | |
| 415660 | Rectory Way, Ickenham | 41 | 32 | 54/57 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | A | 91 | R | T | - | - | - | - | |
| 416858 | Kenbury Close, Ickenham | 41 | 32 | 53/56 | 50 | 45 | 53 | 50 | 45 | 1 | 0 | A | 133 | R | T | - | - | - | - | |
| 417742 | Swakeleys Road, Ickenham | 39 | 30 | 51/54 | 47 | 39 | 44 | 47 | 39 | 1 | 0 | A | 98 | R | T | - | - | - | - | |
| 418434 | Breakspear Road South, Harefield | 44 | 35 | 56/60 | 57 | 49 | 61 | 57 | 49 | 0 | 0 | NA | 4 | R | T | - | - | - | - | |
| 418507 | Tile Kiln Lane, Harefield | 49 | 40 | 65/68 | 52 | 46 | 54 | 53 | 47 | 2 | 1 | A | 6 | R | T | - | - | - | - | |
| 418583 | Tile Kiln Lane, Harefield | 44 | 35 | 60/63 | 52 | 46 | 54 | 52 | 46 | 1 | 0 | A | 1 | R | T | - | - | - | - | |
| 418730 | Allonby Drive, Ruislip | 42 | 33 | 55/58 | 56 | 50 | 62 | 56 | 50 | 0 | 0 | A | 147 | R | T | - | - | - | - | |

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| 418969 | Tile Kiln Lane, Harefield | 50 | 41 | 68/71 | 52 | 46 | 54 | 54 | 47 | 2 | 1 | A | 8 | R | T | - | - | - | - | |
| 419116 | Breakspear Road South, Ickenham | 58 | 49 | 69/73 | 50 | 48 | 53 | 58 | 51 | 9 | 3 | A | 3 | R | T | - | - | - | - | ~ |
| 419154 | Hoylake Crescent, Ickenham | 56 | 46 | 69/73 | 52 | 44 | 44 | 56 | 47 | 5 | 3 | A | 25 | R | T | - | - | - | - | OSV06-C01 |
| 419186 | Hoylake Crescent, Ickenham | 55 | 46 | 69/73 | 52 | 45 | 52 | 57 | 49 | 5 | 3 | A | 8 | R | T | - | - | - | - | OSV06-C01 |
| 419214 | Hoylake Crescent, Ickenham | 58 | 48 | 71/74 | 54 | 48 | 53 | 59 | 51 | 5 | 3 | A | 10 | R | T | - | - | - | - | OSV06-C01 |
| 419263 | Hoylake Crescent, Ickenham | 57 | 48 | 69/72 | 49 | 47 | 57 | 58 | 51 | 9 | 4 | A | 11 | R | T | - | - | - | - | OSV06-C01 |
| 419323 | Breakspear Road South, Harefield | 57 | 48 | 68/72 | 57 | 49 | 61 | 59 | 51 | 2 | 2 | A | 8 | R | T | - | - | - | - | |
| 420281 | New Years Green Lane, Harefield | 41 | 32 | 54/57 | 54 | 44 | 48 | 55 | 44 | 0 | 0 | NA | 9 | R | T | - | - | - | - | |
| 420688 | Lysander Road, Ruislip | 38 | 28 | 57/60 | 57 | 51 | 69 | 57 | 51 | 0 | 0 | A | 25 | R | T | - | - | - | - | |
| 420766 | Ickenham Close, Ruislip | 38 | 29 | 58/61 | 49 | 43 | 56 | 49 | 43 | 0 | 0 | A | 28 | R | T | - | - | - | - | |
| 420916 | Ickenham Close, Ruislip | 28 | 19 | 58/61 | 49 | 43 | 56 | 49 | 43 | 0 | 0 | A | 49 | R | T | - | - | - | - | |
| 421034 | Cranston Close, Ickenham | 36 | 27 | 56/59 | 58 | 50 | 54 | 58 | 50 | 0 | 0 | A | 166 | R | T | - | - | - | - | |
| 421089 | Aylsham Drive, Ickenham | 36 | 27 | 53/56 | 55 | 47 | 62 | 55 | 47 | 0 | 0 | A | 179 | R | T | - | - | - | - | |
| 421774 | Lysander Road, Ruislip | 36 | 26 | 57/60 | 57 | 51 | 69 | 57 | 51 | 0 | 0 | A | 133 | R | T | - | - | - | - | |
| 422160 | Ickenham Close, Ruislip | 31 | 21 | 60/63 | 49 | 43 | 56 | 49 | 43 | 0 | 0 | A | 19 | R | T | - | - | - | - | |
| 422482 | Oak Avenue, Ickenham | 42 | 33 | 58/61 | 48 | 40 | 46 | 49 | 41 | 1 | 1 | A | 20 | R | T | - | - | - | - | |
| 422588 | The Greenway, Ickenham | 44 | 35 | 59/62 | 50 | 45 | 53 | 51 | 45 | 1 | 0 | A | 16 | R | T | - | - | - | - | |
| 422618 | The Greenway, Ickenham | 47 | 38 | 62/65 | 48 | 40 | 46 | 51 | 42 | 2 | 2 | A | 6 | R | T | - | - | - | - | |
| 422671 | The Greenway, Ickenham | 51 | 42 | 65/68 | 48 | 45 | 53 | 53 | 47 | 5 | 2 | A | 8 | R | T | - | - | - | - | OSV06-C01 |

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| 422883 | Haslam Close, Ickenham | 38 | 29 | 56/59 | 55 | 47 | 62 | 55 | 47 | 0 | 0 | A | 111 | R | T | - | - | - | - | |
| 422977 | The Greenway, Ickenham | 46 | 37 | 64/67 | 50 | 45 | 53 | 51 | 45 | 2 | 1 | A | 20 | R | T | - | - | - | - | |
| 422998 | The Greenway, Ickenham | 52 | 43 | 67/70 | 59 | 53 | 57 | 59 | 53 | 1 | 0 | A | 10 | R | T | - | - | - | - | |
| 423037 | The Greenway, Ickenham | 54 | 45 | 68/71 | 59 | 53 | 57 | 60 | 54 | 1 | 1 | A | 10 | R | T | - | - | - | - | |
| 423100 | Ickenham Road, Ruislip | 41 | 32 | 61/64 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | A | 12 | R | T | H | - | - | - | |
| 423112 | Ickenham Road, Ruislip | 42 | 33 | 61/64 | 53 | 50 | 67 | 53 | 50 | 0 | 0 | A | 10 | R | T | - | - | - | - | |
| 423340 | The Greenway, Ickenham | 48 | 39 | 67/70 | 58 | 50 | 54 | 58 | 51 | 0 | 0 | A | 12 | R | T | - | - | - | - | |
| 423354 | The Greenway, Ickenham | 50 | 41 | 67/70 | 58 | 50 | 54 | 58 | 51 | 1 | 0 | A | 12 | R | T | - | - | - | - | |
| 423385 | The Greenway, Ickenham | 49 | 40 | 64/67 | 48 | 40 | 46 | 52 | 43 | 3 | 3 | A | 7 | R | T | - | - | - | - | OSV06-C01 |
| 423730 | Parkfield Road, Ickenham | 40 | 31 | 55/58 | 48 | 40 | 46 | 49 | 40 | 1 | 1 | A | 25 | R | T | - | - | - | - | |
| 426310 | Ravenscourt Close, Ruislip | 43 | 34 | 58/61 | 52 | 46 | 54 | 52 | 46 | 1 | 0 | A | 52 | R | T | - | - | - | - | |
| 426811 | Woodville Gardens, Ruislip | 44 | 35 | 60/63 | 52 | 46 | 54 | 52 | 46 | 1 | 0 | A | 23 | R | T | - | - | - | - | |
| 427629 | Larkspur Close, Ruislip | 42 | 33 | 58/61 | 52 | 46 | 54 | 52 | 46 | 0 | 0 | A | 69 | R | T | - | - | - | - | |
| 428888 | Harwell Close, Ruislip | 41 | 32 | 58/61 | 55 | 50 | 67 | 55 | 50 | 0 | 0 | A | 10 | R | T | - | - | - | - | |
| 428937 | Ickenham Road, Ruislip | 39 | 29 | 57/60 | 53 | 50 | 67 | 53 | 50 | 0 | 0 | A | 34 | R | T | - | - | - | - | |
| 429574 | Glenhurst Avenue, Ruislip | 46 | 37 | 62/65 | 52 | 46 | 54 | 53 | 46 | 1 | 0 | A | 46 | R | T | - | - | - | - | |
| 429655 | Glenhurst Avenue, Ruislip | 43 | 34 | 58/61 | 52 | 46 | 54 | 52 | 46 | 1 | 0 | A | 84 | R | T | - | - | - | - | |
| 429776 | Field Way, Ruislip | 45 | 36 | 60/63 | 52 | 46 | 54 | 52 | 46 | 1 | 0 | A | 36 | R | T | - | - | - | - | |
| 429830 | Hill Rise, Ruislip | 42 | 33 | 59/62 | 52 | 46 | 54 | 52 | 46 | 0 | 0 | A | 28 | R | T | - | - | - | - | |
| 433144 | Ickenham Road, Ruislip | 41 | 32 | 72/75 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | A | 3 | R | T | H | - | - | - | |
| 433365 | Aylsham Drive, Ickenham | 40 | 31 | 55/58 | 55 | 47 | 62 | 55 | 47 | 0 | 0 | A | 82 | R | T | - | - | - | - | |

| Assessment Location | | Impact criteria | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| 700377 | The Greenway, Ickenham | 58 | 49 | 77/80 | 59 | 53 | 57 | 62 | 54 | 3 | 2 | A | 5 | R | T | - | - | - | - | OSV06-C01 |
| 401424 | Harvil Road, Harefield, (Office) | 58 | 49 | 70/73 | 46 | 39 | 67 | 54 | 46 | 9 | 6 | B | 1 | G5 | T | - | - | - | - | ^ |
| 411869 | Hall, Swakeleys Road, Ickenham (Hall) | 43 | 34 | 56/59 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | B | 1 | G3 | T | - | - | - | - | |
| 411869 | Ickenham United Reformed Church (Church) | 43 | 34 | 56/59 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | B | 1 | G3 | T | - | - | - | - | |
| 412363 | Breakspear Junior School, Ickenham (Junior School) | 47 | 38 | 61/64 | 56 | 51 | 64 | 56 | 51 | 1 | 0 | B | 1 | G4 | T | - | - | - | - | |
| 413332 | Wallasey Medical Centre, Ickenham (Health Centre) | 43 | 34 | 55/58 | 56 | 51 | 64 | 56 | 51 | 0 | 0 | B | 1 | G4 | T | - | - | - | - | |
| 414183 | Copthall Farm, Breakspear Road South (General Commercial) | 50 | 41 | 62/65 | 58 | 50 | 62 | 58 | 51 | 1 | 0 | B | 2 | G5 | T | - | - | - | - | |
| 414183 | The Old Courtyard, Breakspear Road South (Office) | 50 | 41 | 62/65 | 58 | 50 | 62 | 58 | 51 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 416858 | Greenwood Veterinary Clinic (Veterinary Surgery) | 41 | 32 | 53/56 | 50 | 45 | 53 | 50 | 45 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 416858 | Swakeleys Dental Practice (Dental Surgery) | 41 | 32 | 53/56 | 50 | 45 | 53 | 50 | 45 | 1 | 0 | B | 1 | G4 | T | - | - | - | - | |
| 417742 | Swakeleys Road, Ickenham (Office) | 39 | 30 | 51/54 | 47 | 39 | 44 | 47 | 39 | 1 | 0 | B | 16 | G5 | T | - | - | - | - | |
| 417742 | The Dental Surgery, Swakeleys Road (Dental Surgery) | 39 | 30 | 51/54 | 47 | 39 | 44 | 47 | 39 | 1 | 0 | B | 1 | G4 | T | - | - | - | - | |
| 417742 | Swakeleys Medical Centre, Swakeleys Road (Health | 39 | 30 | 51/54 | 47 | 39 | 44 | 47 | 39 | 1 | 0 | B | 1 | G4 | T | - | - | - | - | |

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | Significant effect |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| | Centre) | | | | | | | | | | | | | | | | | | | |
| 418434 | Crow's-nest Farm, Breakspear Road South (General Commercial) | 44 | 35 | 56/60 | 52 | 38 | 47 | 53 | 41 | 1 | 3 | B | 1 | G5 | T | - | - | - | - | $ |
| 420281 | Bray, New Years Green Lane (General Commercial) | 41 | 32 | 54/57 | 52 | 38 | 47 | 53 | 41 | 1 | 3 | B | 1 | G5 | T | - | - | - | - | $ |
| 420281 | St. Leonards Farm, New Years Green Lane (Office) | 41 | 32 | 54/57 | 52 | 38 | 47 | 53 | 41 | 1 | 3 | B | 2 | G5 | T | - | - | - | - | $ |
| 420688 | Cordingley Road, Ruislip (Military Youth Club) | 38 | 28 | 57/60 | 57 | 51 | 69 | 57 | 51 | 0 | 0 | B | 1 | G3 | T | - | - | - | - | |
| 420916 | Station Yard, Ickenham Road (General Commercial) | 28 | 19 | 58/61 | 49 | 43 | 56 | 49 | 43 | 0 | 0 | B | 3 | G5 | T | - | - | - | - | |
| 421089 | St. Martin's Medical Centre (Health Centre) | 36 | 27 | 53/56 | 55 | 47 | 62 | 55 | 47 | 0 | 0 | B | 2 | G4 | T | - | - | - | - | |
| 422588 | The Green, High Road (General Commercial) | 44 | 35 | 59/62 | 50 | 45 | 53 | 51 | 45 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 422977 | Pond House, High Road, Ickenham (Estate Agency) | 46 | 37 | 64/67 | 50 | 45 | 53 | 51 | 45 | 2 | 1 | B | 1 | G5 | T | - | - | - | - | |
| 422977 | High Road, Ickenham (General Commercial) | 46 | 37 | 64/67 | 50 | 45 | 53 | 51 | 45 | 2 | 1 | B | 1 | G5 | T | - | - | - | - | |
| 422977 | High Road, Ickenham (General Commercial) | 46 | 37 | 64/67 | 50 | 45 | 53 | 51 | 45 | 2 | 1 | B | 1 | G5 | T | - | - | - | - | |
| 423100 | Knights Court, Ickenham Road, Ruislip (Shopping) | 41 | 32 | 61/64 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | B | 1 | G5 | T | H | - | - | - | |
| 423100 | Station Parade, Ickenham | 41 | 32 | 61/64 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | B | 5 | G5 | T | H | - | - | - | |

| Assessment Location | | Impact criteria | | | | | | | | | | Significance criteria | | | | | | | | Significant effect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Area represented | Proposed Scheme only (Year 15 traffic) | | | Do nothing (Opening year baseline) | | | Do something (Opening year baseline + Year 15 traffic) **** | | Change | | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Mitigation of effect | |
| | | Day * | Night ** | Max *** | Day * | Night ** | Max *** | Day * | Night ** | Day * | Night ** | | | | | | | | | |
| | Road, Ruislip (Post Office) | | | | | | | | | | | | | | | | | | | |
| 423730 | High Road, Ickenham (Car Dealer) | 40 | 31 | 55/58 | 48 | 40 | 46 | 49 | 40 | 1 | 1 | B | 1 | G5 | T | - | - | - | - | |
| 423730 | High Road, Ickenham (General Commercial) | 40 | 31 | 55/58 | 48 | 40 | 46 | 49 | 40 | 1 | 1 | B | 1 | G5 | T | - | - | - | - | |
| 428937 | Ickenham Road, Ruislip (Club) | 39 | 29 | 57/60 | 53 | 50 | 67 | 53 | 50 | 0 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 428937 | Ickenham Road, Ruislip (General Commercial) | 39 | 29 | 57/60 | 53 | 50 | 67 | 53 | 50 | 0 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 433144 | West Ruislip Station, Ickenham Road (Shopping) | 41 | 32 | 72/75 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | B | 1 | G5 | T | H | - | - | - | |
| 433144 | Blenheim Care Centre, Ickenham Road (Day Care) | 41 | 32 | 72/75 | 73 | 67 | 79 | 73 | 67 | 0 | 0 | B | 1 | G4 | T | H | - | - | - | |
| 700378 | Ickenham Road, Ruislip (Shopping) | 49 | 40 | 70/73 | 58 | 50 | 54 | 58 | 51 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 709518 | Research Farm, Ickenham (Research facility) | 76 | 67 | 87/90 | 57 | 52 | 56 | 57 | 52 | 1 | 0 | B | 3 | G5 | T | - | - | - | - | |
| 709519 | Research Farm, Ickenham (Research facility) | 68 | 59 | 85/88 | 57 | 52 | 56 | 57 | 52 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |
| 709520 | Research Farm, Ickenham (Research facility) | 73 | 64 | 88/91 | 57 | 52 | 56 | 57 | 52 | 1 | 0 | B | 1 | G5 | T | - | - | - | - | |

### *Direct impact - Summary*

4.4.8 The operational airborne noise impacts identified in Table 3 are summarised in Table 4.

Table 4: Summary of operational airborne noise impacts

| Receptor | Number of impacts | | |
|---|---|---|---|
| | Minor | Moderate | Major |
| Residential properties | 55 | 140 | 0 |
| Non-residential properties | 0 | 1 | 0 |
| Quiet areas | None | None | None |

## 4.5 Assessment of impacts and effects

### Residential receptors: direct effects - individual buildings

4.5.1 The mitigation measures will reduce noise and vibration inside all dwellings such that it will not reach a level where it would significantly affect residents.

### Residential receptors: direct effects –communities

4.5.2 The mitigation measures in this area will avoid noise adverse effects on the majority of receptors, and at the following communities:

- South Ruislip;
- Ruislip Gardens;
- West Ruislip;
- Ickenham (except as noted in Table 5); and
- New Years Green.

4.5.3 Taking account of the envisaged mitigation, Map Series SV-05 (Volume 2 Map book) shows the long term 40dB[2] night-time sound level contour from the operation of trains on the Proposed Scheme. The extent of the 40dB night-time sound level contour is equivalent to, or slightly larger than, the 50dB daytime contour[3]. In general, below these levels adverse effects are not expected.

4.5.4 Above 40dB during the night and 50dB during the day the effect of noise is dependent on the baseline sound levels in that area and the change in sound level (magnitude of effect) brought about by the Proposed Scheme. The airborne noise impacts and effects forecast for the operation of the scheme are presented on Map Series SV-05 (Volume 2 Map Book).

[2] Defined as the equivalent continuous sound level from 23:00 to 07:00 or $L_{pAeq,night}$)

[3] With the train flows described in the assumptions section of this CFA Report, the daytime sound level (defined as the equivalent continuous sound level from 07:00 to 23:00 or $_{LpAeq,day}$) from the Proposed Scheme would be approximately 10dB higher than the night-time sound level. The 40dB contour therefore indicates the distance from the Proposed Scheme at which the daytime sound level would be 50dB.

4.5.4 Minor ground-borne vibration impacts are identified at approximately 10 residential properties on Blenheim Crescent, Ruislip. The residential properties are located within close proximity to an existing railway, which includes the operation of freight services that are a source of appreciable vibration. Considering the number of impacts, the impact magnitude and the likely existing ambient vibration levels, the direct adverse effect on these properties are not considered to be significant.

4.5.5 Five isolated properties within the area have been identified as being subject to an observed adverse noise effect; these effects are likely to be considered as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. However, as the affected properties are spatially remote from larger defined residential areas, are subject to smaller magnitudes of noise effect, or are small in number, the effects are not considered to be significant.

4.5.6 The changes in noise levels are likely to adversely affect the acoustic character of the area such that there is a perceived change in the quality of life. When on a community basis taking account of the local context, the direct adverse effects[4] on the areas of the residential communities identified in Table 5 are considered to be significant.

Table 5: Direct adverse effects on residential communities and shared open areas that are considered significant on a community basis

| Significant effect number (see Map series SV-05 and Table 3) | Source of significant effect | Time of day | Location and details |
|---|---|---|---|
| OSV06-C01 | Airborne noise increase from new train services | Daytime and night-time | Ickenham. Approximately 200 dwellings and associated shared community open areas in the vicinity of the Greenway, Hoylake Crescent, Pynchester Close, Bushey Road and Copthall Road West. Forecast increases in sound due to the railway are likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties. The effect on the acoustic character of residential areas that are located further from the railway would be a minor effect. |

## Residential receptors: indirect effects

4.5.7 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.

4.5.8 The assessment of operational noise and vibration indicates that significant indirect effects on residential receptors are unlikely to occur in this area.

[4] Information is provided in the emerging National Planning Practice Guidance – Noise http://planningguidance.planningportal.gov.uk.

## Non-residential receptors: direct effects

4.5.9 The assessment has identified groundborne vibration impacts at the Days Inn Hotel, Long Drive and a research facility on Breakspear Road South represented by receptor references 620968, 709518, 709519 and 709520. The assessment has also identified an airborne noise impact at offices on Harvil Road represented by receptor reference 401424.

### *Days Inn Hotel, Long Drive*

4.5.10 A minor ground-borne vibration impact is identified at this non-residential receptor, represented by receptor reference 620968. An assessment has been undertaken to determine if this impact results in a likely significant observed adverse noise effect at this non-residential receptor, using the significance criteria detailed in Appendix 001-000.

4.5.11 The hotel is located within close proximity to an existing railway, which includes the operation of freight services that are a source of appreciable vibration. Considering the magnitude of the impact form the Proposed Scheme and the likely existing ambient vibration level, the direct adverse effect on these properties are not considered likely to be significant.

### *Research Facility*

4.5.12 A ground-borne vibration impact has been identified at this receptor, represented by receptor references 709518, 709519 and 709520. An assessment has been undertaken to determine if this impact is to result in a likely significant observed adverse noise effect at this non-residential receptor, using the significance criteria detailed in Appendix 001-000.

4.5.13 This pharmaceutical research facility could contain processes which are sensitive to vibration. The facility is located close to an existing railway upon which includes the operation of heavy freight. Therefore any very sensitive process are likely to already have suitable vibration mitigation is in place. However, this has not been confirmed and therefore, on a worst case basis, this non-residential receptor is identified as being subject to a significant adverse effect denoted by OSV06-N01 in Table 1 and drawing SV-02 (see CFA06 Volume 5 sound, noise and vibration map book). This may take the form of the activity disturbance to very vibration sensitive processes.

### *Harvil Road (Office)*

4.5.14 A minor impact has been identified based upon the change in the airborne noise level incident at this receptor, reference 401424. An assessment has been undertaken to determine if this impact is to result in a likely significant observed adverse noise effect at this non-residential receptor, using the significance criteria detailed in Appendix 001-000.

4.5.15 The site is currently occupied by the Dog's Trust and is a dog rehoming centre set within 16 acres of farmland and home to seventy five purpose-built kennels, and is located approximately 350 m from the route. The main elevations are one / two storeys constructed from masonry and timber cladding. The windows to these buildings appear to be double glazed, and it is likely that ventilation is provided by opening the windows.

4.5.16 The sound levels from the Proposed Scheme within the building are not likely to result in activity disturbance and the maximum noise levels from the proposed scheme are comparable with the levels observed whilst road vehicles are passing the receptor on Harvil Road. Therefore, the impact at this non-residential receptor will not result in a significant adverse noise effect at this receptor.

### *Summary*

4.5.17 The assessment of operational noise and vibration indicates that significant effects are likely on the non-residential receptors identified in Table 6.

4.5.18 The assessment of effects on non-residential receptors has been undertaken on a worst case basis taking account of public available information about each receptor.

Table 6: Likely significant noise or vibration effects on non-residential receptors arising from operation of the Proposed Scheme

| **Significant effect number** (see Map series SV-05 and Table 4) | **Type of significant effect and source** | **Time of day** | **Location and details** |
|---|---|---|---|
| OSV06-N01 | Ground-borne vibration effect[5] inside laboratory buildings due to the operation of train services on surface section of line. | Daytime and night-time | Pharmaceutical research facility, near Ickenham |

## Non-residential receptors: indirect effects

4.5.19 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.

4.5.20 The assessment of operational noise and vibration indicates that significant indirect effects are unlikely to occur on non-residential receptors in this area.

[5] Potential risk of disturbance of any vibration-sensitive research that may be undertaken at these premises. If equipment or operations are vibration sensitive then it is likely that vibration reduction measures are already employed at the facility. This would avoid the significant adverse effect.

## Cumulative effects

4.5.21 Details of properties being currently developed which were afforded planning approval before the safeguarding date are presented in Volume 5: Appendix CT004-000. Within this area, the operational sound, noise or vibration associated with these developments in conjunction with the operation of the Proposed Scheme do not result in any significant cumulative effects.